

AMENDMENTS TO THE ABSTRACT:

An illuminator capable of increasing the service life of discharge tubes, ~~1.~~ ~~The illuminator~~ includes a pair of ~~an~~ a ultraviolet light-emitting discharge tube and a white visible light-emitting discharge tube that are alternately and periodically placed in a lighted state and an unlighted state, such that a state of illumination using only one of the ~~ultraviolet light-emitting discharge tube and the white visible light-emitting discharge tube~~ tubes is realized in at least part of a time domain during the repetition period. The illuminator ~~comprises~~ includes a hot-cathode tube ~~11~~ used for at least one of the ~~ultraviolet light-emitting discharge tube and the white visible light-emitting discharge tube~~ tubes, the hot-cathode tube being arranged in a state where a heating power supply ~~7~~ for heating filaments ~~4~~, and an illuminating power supply ~~8~~ for enabling motion of thermoelectrons within the hot-cathode tube and at the same time periodic repetition of the lighted state and unlighted state, are capable of executing and interrupting application of voltage, independently of each other.